

AMENDMENTS IN THE CLAIMS:

1. (Currently Amended) An optical device comprising an input polariser (4) for passing light having a first ~~polarisation~~ polarization direction (11), a ~~polarisation~~ polarization modifying element (5) for receiving light of the first ~~polarisation~~ polarization direction from the input ~~polariser~~ polarizer (4), and an output ~~polariser~~ polarizer (7) for analysing light from the ~~polarisation~~ polarization modifying element (5), the ~~polarisation~~ polarization modifying element (5) comprising polarization directions of at least first and second sets of regions (8,9) asymmetric with respect to the first polarization direction, each region (8) of the first set changing the ~~polarisation~~ polarization of light from the input ~~polariser~~ polarizer (4) to a second ~~polarisation~~ polarization direction different from the first ~~polarisation~~ polarization direction and each region (9) of the second set supplying light of a third ~~polarisation~~ polarization direction different from the second ~~polarisation~~ polarization direction to output a non-uniform wavefront,

~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) cooperates with the ~~polarisation~~ polarization modifying element (5) such that each first light path through each region (8) of the first set and the output ~~polariser~~ polarizer (7) has substantially the same attenuation and phase change to light from the input ~~polariser~~ polarizer (4) as each second light path through each region (9) of the second set and the output ~~polariser~~ polarizer (7) to output a uniform wavefront,

the output polarizer (7) is arranged to transmit only the slow axis component of light from the first and second sets of regions (8,9), and

~~in that~~ the ~~polarisation~~ polarization modifying element (5) comprises a patterned retarder, and wherein the output ~~polariser~~ polarizer (7) is arranged to transmit equal proportions of slow and fast axis components of light from each of the first and second sets of regions (8,9).

2. (Currently Amended) A device as claimed in claim 1, ~~characterised in that~~ wherein the regions (8,9) of the first and second sets are interleaved and comprise first and second parallel strips, respectively.

3. (Currently Amended) A device as claimed in claim 2, ~~characterised in that~~ wherein the first strips (8) have a first width and the second strips (9) have a second width greater than the first width.

4. (Currently Amended) A device as claimed in claim 1, ~~characterised in that~~ wherein the second and third ~~polarisation~~ polarization directions are substantially orthogonal.

5. (Currently Amended) A device as claimed in claim 1, ~~characterised in that~~ wherein the third ~~polarisation~~ polarization direction is the same as the first ~~polarisation~~ polarization direction.

6. (Currently Amended) A device as claimed in claim 1, ~~characterised by and~~ having an alternative mode of operation in which the output ~~polariser~~ polarizer (7) is arranged to pass light from the regions (8) of one of the first and second sets and to attenuate light from the regions (9) of the other of the first and second sets.

7. (Currently Amended) A device as claimed in claim 6, ~~characterised in that~~ wherein the one of the first and second sets is the first set.

8. (Currently Amended) A device as claimed in claim 6, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode.

9-10. (Canceled)

11. (Currently Amended) A device as claimed in claim 1, ~~characterised in that~~ wherein the retarder (5) comprises a photo-polymerised polymer.

12. (Currently Amended) A device as claimed in claim 1, ~~characterised in that~~ wherein the retarder (5) provides a half wave of retardation at a visible light frequency.

13. (Currently Amended) A device as claimed in claim 12, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is oriented at 45° to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is parallel to the first ~~polarisation~~ polarization direction.

14. (Currently Amended) A device as claimed in claim 13, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) transmits light having a ~~polarisation~~ polarization direction oriented at 45° to the first ~~polarisation~~ polarization direction.

15. (Currently Amended) A device as claimed in claim 14, ~~characterised by and~~ having an alternative mode of operation in which the output ~~polariser~~ polarizer (7) is arranged to pass light from the regions (8) of one of the first and second sets and to attenuate light from the regions (9) of the other of the first and second sets, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, and ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is flipped by 180° in the alternative mode so as to transmit light having a ~~polarisation~~ polarization direction substantially orthogonal to the first ~~polarisation~~ polarization direction.

16. (Currently Amended) A device as claimed in claim 12, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is oriented at 22.5° to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is oriented at -22.5° to the first ~~polarisation~~ polarization direction.

17. (Currently Amended) A device as claimed in claim 12, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is parallel to the first

~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is oriented at 45° to the first ~~polarisation~~ polarization direction.

18. (Currently Amended) A device as claimed in claim 1, ~~characterised by and~~ comprising a further ~~polarisation~~ polarization modifying element (25) between the input and the output ~~polariser~~ polarizers.

19. (Currently Amended) A device as claimed in claim 18, ~~characterised in that~~ wherein the further element (25) is a further retarder.

20. (Currently Amended) A device as claimed in claim 19, ~~characterised in that~~ wherein the further retarder (25) provides a half wave of retardation at a visible light frequency.

21. (Currently Amended) A device as claimed in claim 20, ~~characterised in that~~ wherein the further retarder (25) is a liquid crystal device.

22. (Currently Amended) A device as claimed in claim 20, ~~characterised in that~~ wherein the retarder (5) provides a half wave of retardation at a visible light frequency, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is oriented at 45° to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is parallel to the first ~~polarisation~~ polarization direction, and ~~characterised in that~~ wherein the further retarder (25) has a slow axis oriented at 22.5° to the first ~~polarisation~~ polarization direction.

23. (Currently Amended) A device as claimed in claim 22, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) transmits light having a ~~polarisation~~ polarization direction parallel to the first ~~polarisation~~ polarization direction.

24. (Currently Amended) A device as claimed in claim 23,

~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, and ~~characterised in that~~ wherein the further retarder (25) and the output ~~polariser~~ polarizer (7) are rotatable as a unit through 180° about an axis parallel to the slow axis of each region (8) of the first set for the alternative mode.

25. (Currently Amended) A device as claimed in claim 21, ~~characterised in that~~ wherein the further retarder (25) comprises at least one region whose slow axis is switchable between a first orientation substantially parallel to the first and second light paths and a second orientation substantially perpendicular to the first orientation.

26. (Currently Amended) A device as claimed in claim 25, ~~characterised in that~~ wherein the further retarder (25) is a Freedericksz cell.

27. (Currently Amended) A device as claimed in claim 25, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is oriented at 45° to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is parallel to the first ~~polarisation~~ polarization direction, and ~~characterised in that~~ wherein the first orientation is for the alternative mode, the second orientation is oriented at 22.5° to the first ~~polarisation~~ polarization direction, and the output ~~polariser~~ polarizer (7) transmits light having a ~~polarisation~~ polarization direction perpendicular to the first ~~polarisation~~ polarization direction.

28. (Currently Amended) A device as claimed in claim 25, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is oriented at 22.5° to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is oriented at -22.5° to the first ~~polarisation~~ polarization direction, ~~characterised by and~~ comprising a further ~~polarisation~~ polarization modifying element (25) between the input and the output ~~polariser~~ polarizers, and

~~characterised in that~~ wherein the second orientation is for the alternative mode and is oriented at 67.5° to the first ~~polarisation~~ polarization direction and the output ~~polariser~~ polarizer (7) transmits light having a ~~polarisation~~ polarization direction perpendicular to the first ~~polarisation~~ polarization direction.

29. (Currently Amended) A device as claimed in claim 25, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is parallel to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is oriented at 45° to the first ~~polarisation~~ polarization direction, and ~~characterised in that~~ wherein the second orientation is for the alternative mode and is oriented at 22.5° to the first ~~polarisation~~ polarization direction and the output ~~polariser~~ polarizer (7) transmits light having a ~~polarisation~~ polarization direction oriented at 45° to the first ~~polarisation~~ polarization direction.

30. (Currently Amended) A device as claimed in claim 20, ~~characterised in that~~ wherein the further retarder (25) comprises at least one region whose slow axis is switchable between third and fourth orientations substantially perpendicular to the first and second light paths.

31. (Currently Amended) A device as claimed in claim 30, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, ~~characterised in that~~ wherein the slow axis of each region (8) of the first set is oriented at 22.5° to the first ~~polarisation~~ polarization direction and the slow axis of each region (9) of the second set is oriented at -22.5° to the first ~~polarisation~~ polarization direction, and ~~characterised in that~~ wherein the third orientation is perpendicular to the first ~~polarisation~~ polarization direction and the fourth orientation is for the alternative mode and is oriented at 67.5° to the first ~~polarisation~~ polarization direction.

32. (Currently Amended) A device as claimed in claim 18, ~~characterised in that~~ wherein the further element (25) is a ~~polarisation~~ polarization rotator.

33. (Currently Amended) A device as claimed in claim 32, ~~characterised in that~~ wherein the slow axis of the or each region (8) of the first set is oriented at 45° to the first ~~polarisation~~ polarization direction and the slow axis of the or each region (9) of the second set is parallel to the first ~~polarisation~~ polarization direction, and ~~characterised in that~~ wherein the rotator (25) comprises at least one region which provides a ~~polarisation~~ polarization rotation of 45° .

34. (Currently Amended) A device as claimed in claim 33, ~~characterised in that~~ wherein the rotator (25) comprises a twisted nematic liquid crystal device.

35. (Currently Amended) A device as claimed in claim 34, ~~characterised in that~~ wherein the liquid crystal device (25) has an alignment direction (50), at a liquid crystal surface nearer the input ~~polariser~~ polarizer (4), parallel to the first ~~polarisation~~ polarization direction and an alignment direction (51), at a liquid crystal surface nearer the output ~~polariser~~ polarizer (7), oriented at 45° to the first ~~polarisation~~ polarization direction.

36. (Currently Amended) A device as claimed in claim 34, ~~characterised in that~~ wherein the liquid crystal device (25) has an alignment direction (50), at a liquid crystal surface nearer the input ~~polariser~~ polarizer (4), oriented at 22.5° to the first ~~polarisation~~ polarization direction and an alignment direction (51), at a liquid crystal surface nearer the output ~~polariser~~ polarizer (7), oriented at 112.5° to the first ~~polarisation~~ polarization direction.

37. (Currently Amended) A device as claimed in claim 34, ~~characterised in that~~ wherein the liquid crystal device (25) has an alignment direction (50), at a liquid

crystal surface nearer the input ~~polariser~~ polarizer (4), oriented at 12.5° to the first ~~polarisation~~ polarization direction and an alignment direction (51), at a liquid crystal surface nearer the output ~~polariser~~ polarizer (7), oriented at 102.5° to the first ~~polarisation~~ polarization direction.

38. (Currently Amended) A device as claimed in claim 32, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, and ~~characterised in that~~ wherein the ~~polarisation~~ polarization rotator (25) is disableable for the alternative mode.

39. (Currently Amended) A display ~~characterised by~~ comprising a device as claimed in claim 1.

40. (Currently Amended) A display as claimed in claim 39, ~~characterised by~~ comprising a spatial light modulator (2).

41. (Currently Amended) A display as claimed in claim 40, ~~characterised in that~~ wherein the modulator (2) is a liquid crystal spatial light modulator.

42. (Currently Amended) A display as claimed claim 39, ~~characterised by~~ having an autostereoscopic mode.

43. (Currently Amended) A display as claimed in claim 42, ~~characterised in that~~ wherein the output ~~polariser~~ polarizer (7) is arranged substantially to block light from the other (9) of the first and second sets in the alternative mode, and ~~characterised in that~~ wherein the device (25) when in the alternative mode forms a front or rear parallax barrier.